

CHICAGO
Electric Power Tools

1/4 INCH TRIMMER ROUTER

Model 44914

ASSEMBLY AND OPERATING INSTRUCTIONS



*Workpiece not
included*

3491 Mission Oaks Blvd., Camarillo, CA 93011
Visit our Web site at <http://www.harborfreight.com>

**TO PREVENT SERIOUS INJURY,
READ AND UNDERSTAND ALL WARNINGS
AND INSTRUCTIONS BEFORE USE.**

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For technical questions and replacement parts, please call 1-800-444-3353

REV 02/04

Specifications

Motor	120V, 60 Hz, 2.4 (startup) amp, 26,000 RPM, 400 W
Line Cord	7 feet; Plug: 2-prong polarized, U.L. listed
Collet	1/4 inch
Accessories Included	Trimmer Guide Spindle Wrench Collet Wrenches
Weight	3.15 lbs



Save This Manual

You will need the manual for the safety warnings and precautions, assembly instructions, operating and maintenance procedures, parts list and diagram. Keep your invoice with this manual. Write the invoice number on the inside of the front cover. Keep the manual and invoice in a safe and dry place for future reference.

GENERAL SAFETY RULES

⚠ WARNING!

READ AND UNDERSTAND ALL INSTRUCTIONS
Failure to follow all instructions listed below may result in electric shock, fire, and/or serious injury.
SAVE THESE INSTRUCTIONS

WORK AREA

1. **Keep your work area clean and well lit.** Cluttered benches and dark areas invite accidents.
2. **Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gases, or dust.** Power tools create sparks which may ignite the dust or fumes.
3. **Keep bystanders, children, and visitors away while operating a power tool.** Distractions can cause you to lose control. Protect others in the work area from debris such as chips and sparks. Provide barriers or shields as needed.

ELECTRICAL SAFETY

4. **Grounded tools must be plugged into an outlet properly installed and grounded in accordance with all codes and ordinances. Never remove the grounding prong or modify the plug in any way. Do not use any adapter plugs. Check with a qualified electrician if you are in doubt as to whether the outlet is properly grounded.** If the tools should electrically malfunction or break down, grounding provides a low resistance path to carry electricity away from the user.

5. Double insulated tools are equipped with a polarized plug (one blade is wider than the other). This plug will fit in a polarized outlet only one way. If the plug does not fit fully in the outlet, reverse the plug. If it still does not fit, contact a qualified electrician to install a polarized outlet. Do not change the plug in any way. Double insulation eliminates the need for the three wire grounded power cord and grounded power supply system.
6. **Avoid body contact with grounded surfaces such as pipes, radiators, ranges, and refrigerators.** There is an increased risk of electric shock if your body is grounded.
7. **Do not expose power tools to rain or wet conditions.** Water entering a power tool will increase the risk of electric shock.
8. **Do not abuse the Power Cord.** Never use the Power Cord to carry the tools or pull the Plug from an outlet. Keep the Power Cord away from heat, oil, sharp edges, or moving parts. Replace damaged Power Cords immediately. Damaged Power Cords increase the risk of electric shock.
9. **When operating a power tool outside, use an outdoor extension cord marked "W-A" or "W".** These extension cords are rated for outdoor use, and reduce the risk of electric shock.

PERSONAL SAFETY

10. **Stay alert. Watch what you are doing, and use common sense when operating a power tool. Do not use a power tool while tired or under the influence of drugs, alcohol, or medication.** A moment of inattention while operating power tools may result in serious personal injury.
11. **Dress properly. Do not wear loose clothing or jewelry. Contain long hair.** Keep your hair, clothing, and gloves away from moving parts. Loose clothes, jewelry, or long hair can be caught in moving parts.
12. **Avoid accidental starting. Be sure the Power Switch is off before plugging in.** Carrying power tools with your finger on the Power Switch, or plugging in power tools with the Power Switch on, invites accidents.
13. **Remove adjusting keys or wrenches before turning the power tool on.** A wrench or a key that is left attached to a rotating part of the power tool may result in personal injury.
14. **Do not overreach. Keep proper footing and balance at all times.** Proper footing and balance enables better control of the power tool in unexpected situations.
15. **Use safety equipment. Always wear eye protection.** Dust mask, nonskid safety shoes, hard hat, or hearing protection must be used for appropriate conditions.

TOOL USE AND CARE

16. **Use clamps (not included) or other practical ways to secure and support the workpiece to a stable platform.** Holding the work by hand or against your body is unstable and may lead to loss of control.

17. **Do not force the tool. Use the correct tool for your application.** The correct tool will do the job better and safer at the rate for which it is designed.
18. **Do not use the power tool if the Power Switch does not turn it on or off.** Any tool that cannot be controlled with the Power Switch is dangerous and must be replaced.
19. **Disconnect the Power Cord Plug from the power source before making any adjustments, changing accessories, or storing the tool.** Such preventive safety measures reduce the risk of starting the tool accidentally.
20. **Store idle tools out of reach of children and other untrained persons.** Tools are dangerous in the hands of untrained users.
21. **Maintain tools with care. Keep cutting tools sharp and clean.** Properly maintained tools with a sharp cutting edge are less likely to bind and are easier to control. Do not use a damaged tool. Tag damaged tools "Do not use" until repaired.
22. **Check for misalignment or binding of moving parts, breakage of parts, and any other condition that may affect the tool's operation. If damaged, have the tool serviced before using.** Many accidents are caused by poorly maintained tools.
23. **Use only accessories that are recommended by the manufacturer for your model.** Accessories that may be suitable for one tool may become hazardous when used on another tool.

SERVICE

24. **Tool service must be performed only by qualified repair personnel.** Service or maintenance performed by unqualified personnel could result in a risk of injury.
25. **When servicing a tool, use only identical replacement parts. Follow instructions in the "*Maintenance*" section of this manual.** Use of unauthorized parts or failure to follow maintenance instructions may create a risk of electric shock or injury.

SPECIFIC SAFETY RULES FOR ROUTERS

1. **Hold tool by insulated gripping surfaces when performing an operation where the cutting tool may contact hidden wiring or its own cord.** Contact with "live" wire will make exposed metal parts of the tool "live" and shock the operator.
2. **WARNING: Under no circumstance is the Router base ever to be removed from the Router in order to use bits that are too large to use with the base assembly attached.** The removal of the Router base and using the Router "Free Hand" can lead to SERIOUS BODILY INJURY.
3. **WARNING: This Router has sharp, fast-moving parts.
MISUSE CAN CAUSE SEVERE INJURY.**
 - Never operate the router if the clear plastic cover is not in place.
 - Never touch the bit, collet or any other moving parts while the trimmer is in operation.
 - Never lay the trimmer down until it has stopped rotating completely.

Warning #3 continued on page 5

- Hold the tool firmly when starting, as start up rotation creates significant torque. This can cause you to drop the tool if you are not holding it firmly.
 - Secure the object being routed by clamping, or holding in a vise. Never hold by hand.
4. **Make sure the workpiece is free of nails or other debris.** These can interfere with the cutting process, and possibly cause damage or injury.
 5. **Be careful to use the Power Switch properly.** Be aware that the trimmer will continue to operate while the Power Switch is ON. You must manually turn the switch to OFF to stop the motor.
 6. **Hold the tool firmly while cutting.** The action of the blade against the workpiece can cause it to “kick out,” jumping rapidly away from the workpiece. If you experience excessive “kick out” check your blade to assure that it is the proper type for the material being cut, and that it is sharp.
 7. **Do not handle the router bit immediately after use;** it may be very hot, potentially causing burns or injury.
 8. **People with pacemakers should consult their physician(s) before using this product.** Electromagnetic fields in close proximity to a heart pacemaker could cause interference to or failure of the pacemaker.
 9. **WARNING: Some dust created by power sanding, sawing, grinding, drilling, and other construction activities, contain chemicals known [to the State of California] to cause cancer, birth defects or other reproductive harm.**

Some examples of these chemicals are:

 - A) Lead from lead-based paints
 - B) Crystalline silica from bricks and cement or other masonry products
 - C) Arsenic and chromium from chemically treated lumber.

Your risk from these exposures varies, depending on how often you do this type of work. To reduce your exposure to these chemicals: work in a well ventilated area, and work with approved safety equipment, such as those dust masks that are specially designed to filter out microscopic particles.
(California Health & Safety Code 25249.5, et seq.)
10. **Avoid overloading the tool.**
 - If the speed drops abnormally, decrease the pressure on the bit immediately.
 - Do not apply excessive pressure to the trimmer while cutting.
 - Always use sharpened bits. If the bit stops abruptly, or the bit becomes blocked, release the trigger switch immediately.
 - Never start the trimmer while the bit is in contact with any material. Allow the tool to reach its normal operating speed before applying it to the workpiece.

Warning: The warnings, cautions and instructions discussed in this instruction manual cannot cover all possible conditions and situations that may occur. It must be understood by the operator that COMMON SENSE AND CAUTION ARE FACTORS WHICH CANNOT BE BUILT INTO THIS PRODUCT, BUT MUST BE SUPPLIED BY THE OPERATOR.

GROUNDING

WARNING!

Improperly connecting the grounding wire can result in the risk of electric shock. Check with a qualified electrician if you are in doubt as to whether the outlet is properly grounded. Do not modify the power cord plug provided with the tool. Never remove the grounding prong from the plug. Do not use the tool if the power cord or plug is damaged. If damaged, have it repaired by a service facility before use. If the plug will not fit the outlet, have a proper outlet installed by a qualified electrician.

GROUNDED TOOLS: TOOLS WITH THREE PRONG PLUGS

1. Tools marked with "Grounding Required" have a three wire cord and three prong grounding plug. The plug must be connected to a properly grounded outlet. If the tool should electrically malfunction or break down, grounding provides a low resistance path to carry electricity away from the user, reducing the risk of electric shock. (**See Figure A, below left.**)
2. The grounding prong in the plug is connected through the green wire inside the cord to the grounding system in the tool. The green wire in the cord must be the only wire connected to the tool's grounding system and must never be attached to an electrically "live" terminal. (**See Figure A, below left.**)
3. Your tool must be plugged into an appropriate outlet, properly installed and grounded in accordance with all codes and ordinances. The plug and outlet should look like those in the following illustration. (**See Figure A, below left.**)

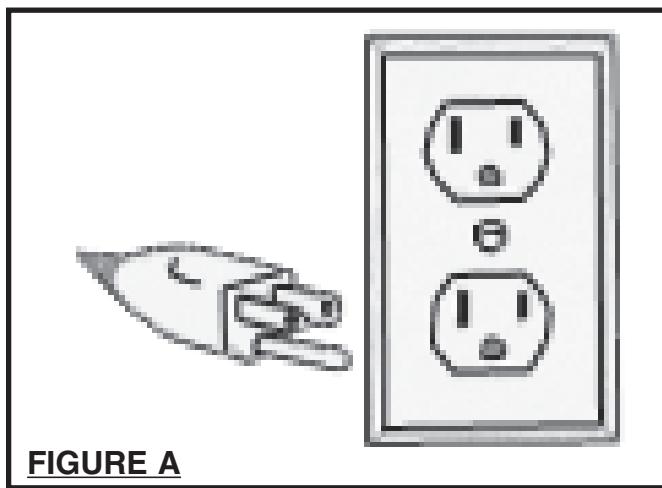


FIGURE A

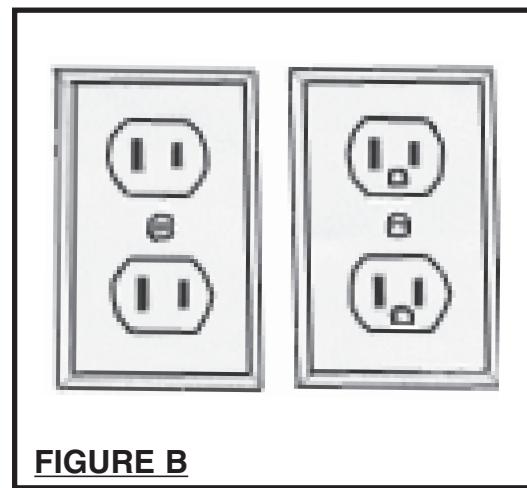


FIGURE B

DOUBLE INSULATED TOOLS: TOOLS WITH TWO PRONG PLUGS

4. Tools marked "Double Insulated" do not require grounding. They have a special double insulation system which satisfies OSHA requirements and complies with the applicable standards of Underwriters Laboratories, Inc., the Canadian Standard Association, and the National Electrical Code. (**See Figure B, above right.**)
5. Double insulated tools may be used in either of the 120 volt outlets shown in the upper right illustration. (**See Figure B, above right.**)

EXTENSION CORDS

1. **Grounded** tools require a three wire extension cord.
2. **As the distance from the supply outlet increases, you must use a heavier gauge extension cord.** Using extension cords with inadequately sized wire causes a serious drop in voltage, resulting in loss of power and possible tool damage. (See Figure C.)
3. **The smaller the gauge number of the wire, the greater the capacity of the cord.** For example, a 14 gauge cord can carry a higher current than a 16 gauge cord. (See Figure C.)
4. **If using more than one extension cord to make up the total length, make sure each cord contains at least the minimum wire size required.** (See Figure C.)

REQUIRED MINIMUM EXTENSION CORD GAUGE - 110 VOLT				
NAMEPLATE AMPERES (At Full Load)	EXTENSION CORD LENGTH			
	0-25 FT.	25-50 FT.	50-100 FT.	100-150 FT.
6	18	16	14	12
8	16	16	12	10
10	16	14	12	10
12	16	14	10	8
14	14	12	10	8
16	14	12	10	8
18	14	12	8	8
20	12	12	8	6
22	12	10	8	6
24	12	10	8	6
26	10	10	8	6
28	10	10	6	4
30	10	10	6	4

FIGURE C

8. **Protect your extension cords from sharp objects, excessive heat, and damp or wet areas.**

5. **If you are using one extension cord for more than one tool, add the nameplate amperes and use the sum to determine the required minimum cord size.** (See Figure C.)

6. **If you are using an extension cord outdoors, make sure it is marked with the suffix "W-A" ("W" in Canada) to indicate it is acceptable for outdoor use.**

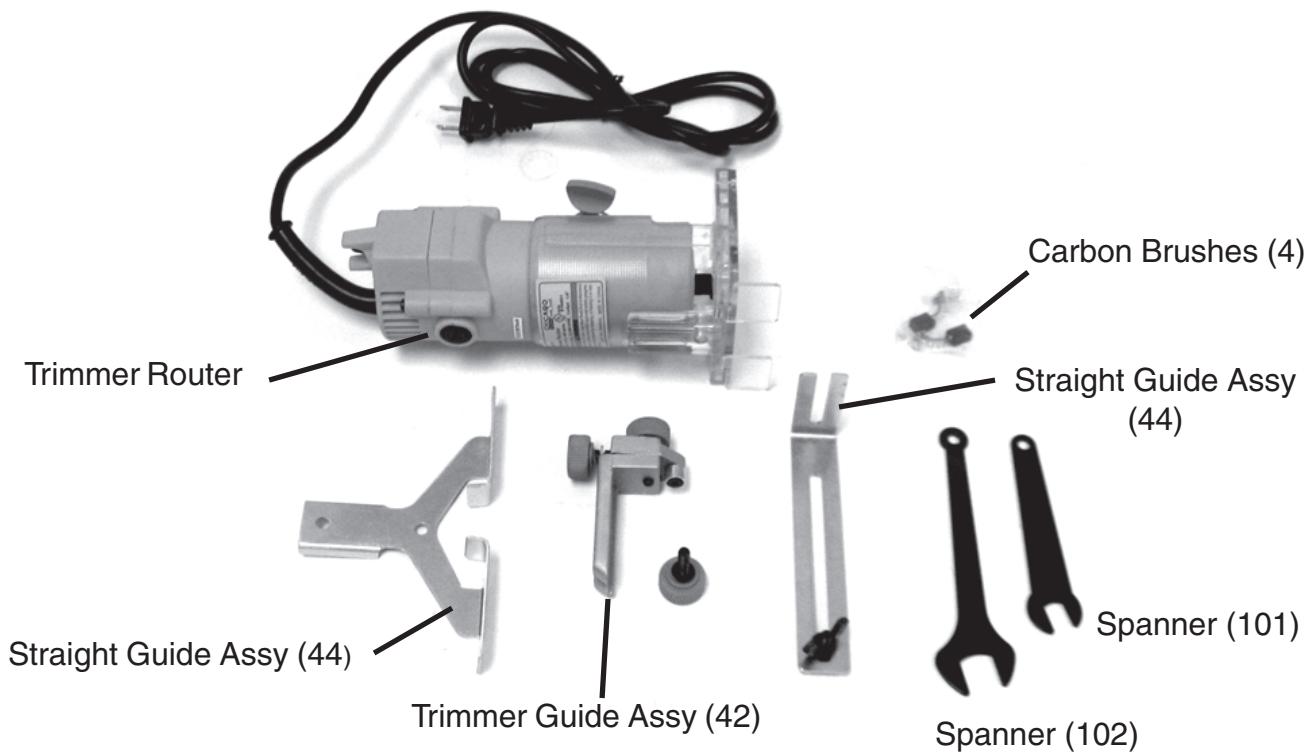
7. **Make sure your extension cord is properly wired and in good electrical condition.** Always replace a damaged extension cord or have it repaired by a qualified electrician before using it.

SYMBOLS

	Double Insulated
	Canadian Standards Association
	Underwriters Laboratories, Inc.
	Volts Alternating Current
	Amperes
no xxxx/min.	No Load Revolutions per Minute (RPM)

Unpacking

When unpacking, check to make sure the following parts are included. If any parts are missing or broken, please call Harbor Freight Tools at the number on the cover of this manual as soon as possible.



Operation

Caution: Before Trimming, run the tool for about 10 seconds to ensure that all moving parts are running smoothly, and there are no loose parts, rattles, or sparking that would indicate damage. Be sure the bit is firmly and properly installed before use. Improperly installed bits may eject suddenly at high speed from the Trimmer, resulting in personal injury.

Installing the Router Bit

1. Unplug the Trimmer Router from the electrical outlet.
2. Insert the small Spanner (101) wrench over the spindle to keep it from turning.
3. Using the large Spanner (102) wrench, loosen the Collet Nut (31), but do not remove.
4. If there is already a bit in the Collet Cone, remove it.
5. Push the shank end of the new bit through the opening in the Collet Nut. There may be some resistance, so make sure that it goes in all the way.
6. While holding the small Spanner (101) over the spindle, tighten the Collet Nut with the large Spanner (102).

Adjusting Cutting Depth

You can set the depth of cut using the scale marked on the side of the Trimmer.

1. Install the router bit as previously described.
2. Loosen the thumbscrew securing the clear plastic Base (32) to the Motor Housing (29). Slide the holder downward so the router bit is retracted within the Base.
3. Place the Base on a flat surface, and slide the Trimmer down in the Base until the tip of the bit contacts the work surface. Tighten the thumbscrew Knob (49).
4. The scale on the housing now shows the starting position. This starting position will vary, depending on the bit used.
5. Add the desired depth of cut to the starting position. For example, if the starting position is 25 mm, and the desired depth of cut is 10 mm, the correct adjustment on the scale is 35 mm.
6. Loosen the thumbscrew Knob, and raise the holder until the scale shows the correct reading; in this example 35 mm. Tighten the thumbscrew Knob. You are now ready to cut.

Note: It is always wise to make a test cut to assure that the Trimmer is adjusted properly before beginning to cut the final workpiece.

Using the Straight Guide

The Straight Guide is used to make cuts parallel to the edge of a workpiece, or following a guide clamped onto the workpiece.

1. Assemble the Straight Guide Assy. (44) with the Straight Guide (442) facing inward, and the flanges down.
2. Using the Thumbscrew (39), attach the Straight Guide Assembly to the Trimmer, as shown.
3. After measuring the proper distance from the router bit to the guard, tighten the Straight Guide using the Thumb Nut (445).
4. Adjust the cutting depth as previously described above.
5. Make a test cut on a piece of scrap material to ensure that your measurement is correct.
6. Make your cut parallel to the edge of the workpiece with the Straight Guide following the edge.

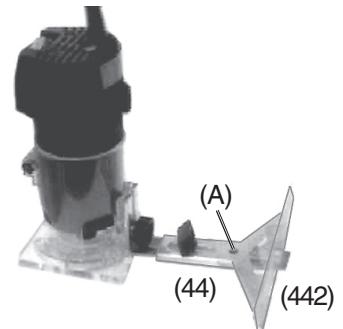


Caution: Always secure the object being routed by clamping, or holding inavise. Never hold by hand.

Alternative Guide Method

You can make a straight cut which does not parallel the edge of the workpiece by clamping down a temporary guide.

1. Clamp a suitable straight board across the workpiece parallel to the desired location of the cut.
2. Assemble the Straight Guide Assy. (44) with the Straight Guide (442) facing outward and up, as shown to the right.
3. After measuring the proper distance from the router bit to the guide, tighten the straight guide using the thumbscrew Knobs.
4. On a piece of scrap material make a test cut to ensure that your measurement is correct.
5. Using the Straight Guide to follow the straight board, make your cut parallel to the guide.



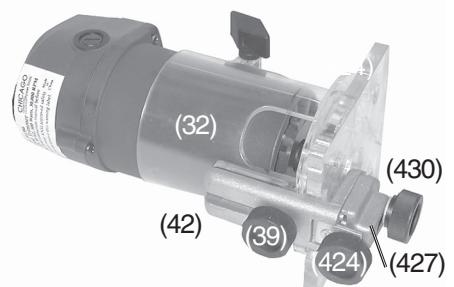
Making Circle Cuts

The center hole (A) in the Straight Guide Assy (44), shown above, can be used as a pivot point to make circle cuts.

1. Install the Straight Guide Assy as shown above.
2. Drill a small pilot hole at the center point of the circle you wish to cut.
3. Set the distance from the center hole (A) in the Straight Guide Assy (44) to the router bit equal to the radius of the circle you wish to cut. Lock the Straight Guide in place with the thumbscrew Knobs.
4. Insert a pin (not included) through the center hole (A) in the Straight Guide Assy., and into the pilot hole.
5. With the pin located in the pilot hole, plunge the trimmer into the workpiece, and rotate the trimmer in a circle around the pilot hole.

Using the Trimmer Guide Assembly

1. Assemble the edge Trimmer Guide Assembly (42), as shown to the right, and attach to the Base (32).
2. Since you will be trimming in relation to both the top surface, and the edge surface, you must adjust the trimmer to cut accurately in two dimensions.
3. Adjust the Base on the Trimmer so the cutting depth will be flush with the surface of the counter top or edge that you will be trimming to match.
4. Adjust the Trimmer Guide Assy. so that the roller is below the router bit by approximately 3/4" to 1." Tighten it in position using Thumbscrew (39).



5. Finally, center the cutting bit over the edge to be trimmed by loosening Thumbscrew (430) and sliding the Guide Block (427) into position. Tighten Thumbscrew (430).
With Thumbscrew (430) partially loosened, fine adjustments can be made with Adjusting Set Screw (424). When the adjustments are finalized, tighten Thumbscrew (430).
6. Make a test cut on a piece of scrap material. Make any necessary adjustments before cutting the final workpiece.

Best Trimming Routing Direction

The Router Bit rotates clockwise. You must adjust for this while cutting.

1. For most materials it is best to move the Router from left to right as you face the workpiece.
2. When cutting outside edges, move the router counterclockwise. When cutting inside edges, move the router clockwise.

Maintenance

Caution: Avoid injuries. Before performing any maintenance on this tool, unplug the power cord from the electrical outlet, and wait for the router and/or bit to cool.

1. Wipe the Tool with a clean cloth after every use.
2. Periodically blow out the Motor vent holes with compressed air to prevent the buildup of dust and particles.
3. Periodically wipe the Collet, Collet Cones, and Cutting Bits with a light oil to prevent rust.
4. Over time, if the performance of the tool diminishes, or it stops working completely, it may be necessary to replace the Carbon Brushes (4) by removing the Brush Holder Cap (5). This procedure must be completed by a qualified technician.

PLEASE READ THE FOLLOWING CAREFULLY

THE MANUFACTURER AND/OR DISTRIBUTOR HAS PROVIDED THE PARTS DIAGRAM IN THIS MANUAL AS A REFERENCE TOOL ONLY. NEITHER THE MANUFACTURER NOR DISTRIBUTOR MAKES ANY REPRESENTATION OR WARRANTY OF ANY KIND TO THE BUYER THAT HE OR SHE IS QUALIFIED TO MAKE ANY REPAIRS TO THE PRODUCT OR THAT HE OR SHE IS QUALIFIED TO REPLACE ANY PARTS OF THE PRODUCT. IN FACT, THE MANUFACTURER AND/OR DISTRIBUTOR EXPRESSLY STATES THAT ALL REPAIRS AND PARTS REPLACEMENTS SHOULD BE UNDERTAKEN BY CERTIFIED AND LICENSED TECHNICIANS AND NOT BY THE BUYER. THE BUYER ASSUMES ALL RISK AND LIABILITY ARISING OUT OF HIS OR HER REPAIRS TO THE ORIGINAL PRODUCT OR REPLACEMENT PARTS THERETO, OR ARISING OUT OF HIS OR HER INSTALLATION OF REPLACEMENT PARTS THERETO.

Parts List

Item #	Description
1	Rear Cover
2	Middle Cover
3	Carbon Brush Holder
4	Carbon Brush
5	Brush Holder Cap
6	Switch
7	Switch Socket
8	Brush Holder Spring
10	Stator
13	Pan Hd. Screw
15	Pan Hd. Screw
16	Strain Relief
17	Tapping Screw
18	Ball Bearing
19	Armature Assembly
20	Fan
21	Ball Bearing
26	Power Cord with Plug
27	Wave Washer
28	Cord Guard
29	Motor Housing
30	Collet Cones
31	Collet Nut
32	Base
33	Gear
34	Screw

Item #	Description
37	Base Plate
38	Chip Fence
39	Thumbscrew
40	Wave Washer
41	Flat Washer
42	Trimmer Guide Assembly: (420~430, 39, 40, 41)
420	Link
421	Counter Sunk Hd. Screw
423	Set Plate
424	Adjusting Set Screw
425	Screw
426	Guide Wheel
427	Guide Block
428	Flat Washer
429	Wave Washer
430	Thumbscrew
44	Straight Guide Assembly: (440~445, 39, 40, 41)
440	Set Screw
441	Adjusting Plate
442	Straight Guide
443	Flat Washer
444	Wave Washer
445	Thumb Nut
46	Pan Hd. Screw
48	Flat Washer
49	Knob Set
101	Spanner
102	Spanner

NOTE: Some parts are listed and shown for illustration purposes only and are not available individually as replacement parts.

Assembly Drawing

